

## INTISARI

### Kajian Kesuburan Air dan Produksi Kapu-Kapu (*Pistia* sp.) dengan Air Buangan Budidaya Lele (*Clarias* sp.) pada Padat Tebar Berbeda

Penelitian ini bertujuan untuk mengetahui kesuburan air buangan budidaya lele (*Clarias* sp.) dengan padat tebar berbeda terhadap produksi kapu-kapu (*Pistia* sp.), serta untuk mengetahui kesuburan air buangan budidaya lele dengan padat tebar berbeda yang dapat menghasilkan produksi kapu-kapu tertinggi. Penelitian ini dilaksanakan pada bulan Maret s/d Juni 2022, di Unit Kolam Percobaan Stasiun Penelitian Departemen Perikanan Fakultas Pertanian Universitas Gadjah Mada. Budidaya kapu-kapu dilakukan dengan menggunakan sumber air buangan dari budidaya lele pada padat tebar berbeda. Lele dipelihara selama 100 hari tanpa menggunakan aerator. Pakan lele diberikan sebanyak 5 s/d 2 % dari berat total lele per ember (70 L air) dan diberi probiotik dengan dosis 4 ml/kg pakan. Probiotik yang digunakan mengandung mikroorganisme yang terdiri dari *Lactobacillus* sp., *Acetobacter* sp., dan Yeast. Pergantian air budidaya lele sebanyak 5 % setiap hari. Air buangan budidaya lele tersebut digunakan sebagai sumber air budidaya kapu-kapu. Kapu-kapu dibudidaya selama 3 periode tanam dan panen selama masa budidaya lele (yaitu pada hari ke-56 s/d 70, hari ke-70 s/d 84, dan hari ke-84 s/d 100). Penelitian ini dirancang menggunakan Rancangan Acak Lengkap (RAL) dengan 4 perlakuan sumber air buangan dari budidaya lele pada padat tebar 35, 70, 105, dan 140 ekor lele/70 L air dan 3 kali ulangan. Parameter yang diamati adalah nisbah konversi pakan (*feed conversion ratio*/FCR); kesuburan air (amonium, nitrat, dan fosfat); dan produksi kapu-kapu per ember (21 L air). Hasil penelitian menunjukkan bahwa kesuburan air (amonium, nitrat, dan fosfat) dan produksi kapu-kapu dipengaruhi oleh sumber air buangan dari budidaya lele dengan padat tebar yang berbeda. Tingkat kesuburan air buangan budidaya lele dengan padat tebar yang semakin tinggi [35, 70, 105, dan 140 ekor lele/ember (70 L air)] menghasilkan amonium, nitrat, dan fosfat yang semakin tinggi (semuanya termasuk eutrofik s/d hipereutrofik). Produksi kapu-kapu pada periode ke-1 dengan sumber air buangan budidaya lele hari ke-56 s/d 70 yang tertinggi sebesar 293,3 g kapu-kapu/ember (21 L air) pada padat tebar 35 s/d 70 ekor lele/ember (70 L air). Produksi kapu-kapu pada periode ke-2 dengan sumber air buangan budidaya lele hari ke-70 s/d 84 yang tertinggi sebesar 503,3 g kapu-kapu/ember (21 L air) pada padat tebar 70 ekor lele/ember (70 L air). Produksi kapu-kapu pada periode ke-3 dengan sumber air buangan budidaya lele hari ke-84 s/d 100 yang tertinggi sebesar 623,7 g kapu-kapu/ember (21 L air) pada padat tebar 35 s/d 105 ekor lele/ember (70 L air).

Kata kunci: amonium, fosfat, kesuburan air, nitrat, produksi kapu-kapu

## ABSTRACT

### Study of Water Fertility and Water Cabbage (*Pistia sp.*) Production with Waste Water of Catfish (*Clarias sp.*) Cultivation on Different Stocking Density

This study was aimed to determine water fertility of catfish (*Clarias sp.*) cultivation waste water with different stocking density on water cabbage (*Pistia sp.*) production, and to determine water fertility of catfish cultivation waste water with different stocking density which could produce the highest water cabbage production. This study was carried out from March to June 2022, at the Experimental Pond Unit of the Research Station of the Department of Fisheries, Faculty of Agriculture, Gadjah Mada University. Water cabbage cultivation was carried out using waste water sources from catfish cultivation at different stocking density. Catfish were reared for 100 days without using an aerators. Catfish feed was given as much as 5 to 2 % of the total weight of catfish per bucket (70 L of water) and probiotics were given at a dose of 4 ml/kg feed. The probiotics used contain microorganisms consist of *Lactobacillus sp.*, *Acetobacter sp.*, and Yeast. Water exchanged catfish cultivation was by 5 % every day. The waste water from catfish cultivation were used as a source of water for water cabbage cultivation. Water cabbage were cultivated for 3 perodes of planting and harvesting during the catfish cultivation period (ie on the 56th to 70th day, the 70th to 84th day, and the 84th to 100th day). This study was designed using a Completely Randomized Design (CRD) with 4 treatments of waste water sources from catfish cultivation at stocking density of 35, 70, 105, and 140 catfish/70 L of water and 3 replicates. Parameters observed were feed conversion ratio (FCR); water fertility (ammonium, nitrate, and phosphate); and water cabbage production per bucket (21 L of water). The results showed that water fertility (ammonium, nitrate, and phosphate) and water cabbage production were affected by the source of waste water from catfish cultivation with different stocking density. The fertility waste water rate of catfish cultivation with higher stocking density [35, 70, 105, and 140 catfish/bucket (70 L of water)] resulted in higher ammonium, nitrate, and phosphate (all of which included eutrophic to hypereutrophic). Water cabbage production in the 1st period with the highest source of waste water from catfish cultivation on days 56 to 70 was 293,3 g water cabbage/bucket (21 L of water) at a stocking density of 35 up to 70 catfish/bucket (70 L of water). The production of water cabbage in the 2nd period with the source of waste water from catfish cultivation on days 70 to 84, the highest was 503,3 g water cabbage/bucket (21 L of water) at a stocking density of 70 catfish/bucket (70 L of water). Water cabbage production in the 3rd period with the source of waste water from catfish cultivation on days 84 to 100, the highest was 623,7 g water cabbage/bucket (21 L of water) at a stocking density of 35 up to 105 catfish/bucket (70 L of water).

Keywords: ammonium, water cabbage production, nitrate, phosphate, water fertility